WHAT IS CLAIMED IS:

1. A retainer for a rolling bearing comprising:

a rolling element receiving pocket for receiving a rolling element, said pocket being formed by finish-machining a blank pocket with a tool member while a machining part of said tool member is inserted into said blank pocket in a radial direction of said retainer and then translated in an axial and revolving directions of said retainer,

wherein said machining part of said tool member has a sectional contour which coincides with a sectional configuration of said pocket in a cross section taken along the radial direction of said retainer after the formation of said pocket is completed.

2. The retainer for rolling bearings as set forth in Claim 1, wherein said pocket comprises a first pocket surface facing toward the revolving direction of said retainer, a second pocket surface facing toward the axial direction of said retainer and an escaping recess disposed between said first and second pocket surfaces, and wherein said tool member comprises a first tool for finish-machining said first pocket surface and a second tool for finish-machining said second pocket surface and said escape recess.

3. The retainer for rolling bearings as set forth in Claim 2, wherein said rolling element is a roller,

said pocket is defined by a pair of ring-shaped side plates and a pair of pillars each having end portions which are respectively connected to said ring-shaped side plates,

said first pocket surface is formed on each of said pillar and said second pocket surface is formed on each of said ring-shaped side plates,

said first pocket surface is formed into an arc-shaped configuration in a cross section along the radial direction of said retainer, and

a minimum plate width of said ring shaped side plates at said escaping recess is made unigorm along the radial direction of said retainer.

4. The retainer for rolling bearings as set forth in Claim 2, wherein said rolling element is a roller,

said pocket is defined by a pair of ring-shaped side plates and a pair of pillars each having end portions which are respectively connected to said ring-shaped side plates,

said first pocket surface is formed on each of said pillar and said second pocket surface is formed on each of said ring-shaped side plates,

said first pocket surface is formed into an arc-shaped configuration in a cross section along the radial direction of said retainer, and

wherein roller run-out preventing portions are formed at end portions of said pillars in the radial direction of said

retainer, the width of said pocket in the revolving direction of the retainer is made smaller than the diameter of said roller, said width being defined between adjacent roller run-out preventing portions and formed at an end thereof in the radial direction of said retainer, and end portions of said run-out preventing portion in the axial direction of said retainer are separated from one of said side plates by the escaping recesses, whereby the length of said run-out preventing portion in the axial direction of said retainer is made shorter than the effective length of said roller.

5. The retainer for rolling bearings as set forth in Claim 2, wherein said rolling element is a roller,

said pocket is defined by a pair of ring-shaped side plates and a pair of pillars each having end portions which are respectively connected to said ring-shaped side plates,

said first pocket surface is formed on each of said pillar and said second pocket surface is formed on each of said ring-shaped side plates,

said first pocket surface is formed into an arc-shaped configuration in a cross section along the radial direction of said retainer, and

wherein roller run-out preventing portions are formed at end portions of said pillars in the radial direction of said retainer, the width of said pocket in the revolving direction of the retainer is made smaller than the diameter of said roller,

said width being defined between adjacent roller run-out preventing portions and formed at an end thereof in the radial direction of said retainer, and

a sectional configuration of said run-out preventing portion along the radial direction of the retainer on the pillar side is formed into a curved line smoothly connecting to said first pocket surface and having a radius of curvature protruding toward said pocket.

6. A retainer for ball bearings comprising:

a ball receiving pocket for receiving a ball, said pocket being formed by finish-machining a blank pocket with a tool member while a machining part of said tool member is inserted into said blank pocket in a radial direction of said retainer and then moved along a circle having a center coincided with a center of said pocket,

wherein said machining part of said tool member has a sectional contour which coincides with a sectional configuration of said pocket in a cross section taken along the radial direction of said retainer after the formation of said pocket is completed.

7. A retainer for roller bearing comprising:

a pair of ring-shaped side plates;

a plurality of pillars arranged in a retainer revolving direction and each having end portions respectively connected

to said ring-shaped side plates;

a roller receiving pocket defined by said ring-shaped side plates and adjacent pillars of said pillars for receiving a roller,

wherein pocket surfaces are formed on sides of said pillars and said side plates, recesses of said pocket are formed at portions where said pillars and said side plates are joined to each other, at least a portion of said pocket surface formed on the side of said pillar with which said roller is brought into contact is formed into an arc-shaped configuration in a cross section along a retainer radial direction, and

wherein a minimum plate width of each of said side plates at said recesses is made uniform along the retainer radial direction.

8. A retainer for roller bearing comprising:

a pair of ring-shaped side plates;

a plurality of pillars arranged in a retainer revolving direction and each having end portions respectively connected to said ring-shaped side plates;

a roller receiving pocket defined by said ring-shaped side plates and adjacent pillars of said pillars for receiving a roller,

wherein pocket surfaces are formed on sides of said pillars and said side plates, recesses of said pocket are formed at portions where said pillars and said side plates are joined

to each other, and at least a portion of said pocket surface formed on the side of said pillar with which said roller is brought into contact is formed into an arc-shaped configuration in a cross section along a retainer radial direction,

wherein roller run-out preventing portions are formed at end portions of said pillars in the retainer radial direction, the width of said pocket in a retainer revolving direction which is defined between adjacent roller run-out preventing portions and formed at an end thereof in the retainer radial direction is made smaller than the diameter of said roller, and end portions of each of said run-out preventing portion in a retainer axial direction are separated from said side plates by said recesses, whereby the length of said run-out preventing portion in the retainer axial direction is made shorter than the effective length of said roller.

9. A retainer for roller bearing comprising:

a pair of ring-shaped side plates;

a plurality of pillars arranged in a retainer revolving direction and each having end portions respectively connected to said ring-shaped side plates;

a roller receiving pocket defined by said ring-shaped side plates and adjacent pillars of said pillars for receiving a roller,

wherein pocket surfaces are formed on sides of said pillars and said side plates, recesses of said pocket are formed

at portions where said pillars and said side plates are joined to each other, at least a portion of said pocket surface formed on the side of said pillar with which said roller is brought into contact is formed into an arc-shaped configuration in a cross section along a retainer radial direction,

a roller run-out preventing portion is formed at an end portion of said pillar in the retainer radial direction,

the width of said pocket in a retainer revolving direction which is defined by adjacent roller run-out preventing portions and formed at an end thereof in the retainer radial direction is made smaller than the diameter of said roller, and

a sectional configuration of said run-out preventing portion along the retainer radial direction on the pillar side is formed into a curved line smoothly connecting to said arc-shaped configuration of said pocket surface formed on the side of said pillar and having a radius of curvature protruding toward said pocket.